

TABLE 4.15.2.1–3.—Summary of Major Laws, Regulations, and Orders Relevant to Waste Management

Laws, Regulations, and Orders	Description
<i>Solid Waste Disposal Act</i> of 1976 (42 U.S.C. §6902)	This Act regulates the management of solid waste. Solid waste is broadly defined to include any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous materials resulting from requirements and controls for transport, test procedures, and administrative requirements. Schedules include industrial, commercial, mining, or agricultural activities. Source-special nuclear or by-product material, as defined by the <i>Atomic Energy Act</i> (AEA), is specifically excluded as solid waste.
<i>Resource Conservation and Recovery Act</i> of 1976 (42 U.S.C. §6901)	This Act amends the <i>Solid Waste Disposal Act</i> and establishes requirements and procedures for the management of hazardous wastes. As amended by the <i>Hazardous and Solid Waste Amendments</i> of 1984 (HSWA), RCRA defines hazardous wastes that are subject to regulation and sets standards for generation, treatment, storage, and disposal facilities. The HSWA emphasize reducing the volume and toxicity of hazardous waste. They also establish permitting and corrective action requirements for RCRA-regulated facilities. RCRA was also amended by the <i>Federal Facilities Compliance Act</i> (FFCA) in 1992. It requires EPA, or a state with delegated authority, to issue an order for compliance. A Federal facilities compliance order was issued by the Cal-EPA, requiring DOE and LLNL to comply with the FFCA. Compliance with the order is achieved through Site Treatment Plans prepared by DOE.
Underground Storage Tanks (42 U.S.C. §6901, Subtitle I)	Underground storage tanks (USTs) are regulated as a separate program under RCRA, which establishes regulatory requirements for USTs containing hazardous or petroleum materials. Cal-EPA has been delegated authority for regulating LLNL.
<i>Federal Facility Compliance Act</i> of 1992 (42 U.S.C. §6961)	<p>This 1992 Act waives sovereign immunity from fines and penalties for RCRA violations at Federal facilities. However, it postponed the waiver for three years for storage prohibition violations with regard to land disposal restrictions for DOE's mixed wastes. It required DOE to prepare plans for developing the required treatment capacity for each site at which it stores or generates mixed waste. The state or U.S. EPA must approve each plan (referred to as a Site Treatment Plan) after consultation with other affected states, consideration of public comments, and issuance of an order by the regulatory agency requiring compliance with the plan. The Act further provides that DOE will not be subject to fines and penalties for storage prohibition violations for mixed waste as long as it complies with an existing agreement, order, or permit.</p> <p>The FFCA requires that Site Treatment Plans contain schedules for developing treatment capacity for mixed waste for which identified technologies exist. DOE must provide schedules for identifying and developing technologies for mixed waste without an identified existing treatment technology. A Federal Facility Compliance Order was signed in 1997 to address treatment prior to disposal of mixed waste, as well as characterization and disposal of mixed TRU waste.</p>
<i>Comprehensive Environmental Response, Compensation, and Liability Act</i> of 1980, as Amended (42 U.S.C. §9601, et seq.)	<p>This Act, commonly referred to as the CERCLA, or Superfund, establishes liability standards and governmental response authorization to address the release of a hazardous substance or contaminant into the environment. EPA is the regulating authority for the Act.</p> <p>CERCLA was amended by the <i>Superfund Amendments and Restoration Act</i> (SARA) in 1986. SARA Title III establishes additional requirements for emergency planning and reporting of hazardous substance releases. These requirements are also known as the <i>Emergency Planning and Community Right-to-Know Act</i> (EPCRA), which, due to its unique requirements is discussed separately below. SARA also created liability for damages to or loss of natural resources resulting from releases into the environment and required the designation of Federal and state officials to act as public trustees for natural resources. LLNL is subject to, and required to report releases to the environment under the notification requirements in 40 CFR Part 302 (Designation, Reportable Quantities, and Notification) and EPCRA, as applicable. Pursuant to CERCLA, Section 120, DOE signed a Federal Facility Agreement for LLNL in 1989.</p>

TABLE 4.15.2.1–3.—Summary of Major Laws, Regulations, and Orders Relevant to Waste Management (continued)

Laws, Regulations, and Orders	Description
<i>Pollution Prevention Act of 1990</i> (42 U.S.C. §13101)	This Act sets the national policy for waste management and pollution control that focuses first on source reduction, followed sequentially by environmentally safe recycling, treatment, and disposal. In response, DOE committed to voluntary participation in EPA's 33/50 Pollution Prevention Program, as set forth in Section 313 of SARA.
<i>Toxic Substances Control Act of 1977</i> (15 U.S.C. §2601)	<p>TSCA, unlike other statutes that regulate chemicals and their risk after they have been introduced into the environment, was intended to require testing and risk assessment before a chemical is introduced into commerce. It also establishes record-keeping and reporting requirements for new information regarding adverse health and environmental effects of chemicals. The Act governs the manufacture, use, storage, handling, and disposal of PCBs; sets standards for cleaning up PCB spills; and establishes standards and requirements for asbestos identification and abatement in schools. It is administered by EPA.</p> <p>Because LLNL's R&D activities are not related to the manufacture of new chemicals, PCBs are LLNL's main concern under the Act. Activities at LLNL that involve PCBs include, but are not limited to, management and use of authorized PCB-containing equipment, such as transformers and capacitors; management and disposal of substances containing PCBs (dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, slurries, dredge spoils, and soils); and management and disposal of materials or equipment contaminated with PCBs as a result of spills.</p> <p>At LLNL, PCB-contaminated wastes are transported offsite for treatment and disposal unless they also have a radioactive component. Nonradioactive wastes containing PCBs are disposed of at an offsite facility that has been approved by EPA for such disposal (provided that strict requirements are met with respect to notification, reporting, record-keeping, operating conditions, environmental monitoring, packaging, and types of wastes disposed). Radioactive PCB waste, typically known as mixed TRU waste or mixed waste, is currently stored at one of LLNL's hazardous waste storage facilities until the Waste Isolation Pilot Project, or other approved facility, accepts this waste for final disposal.</p> <p>LLNL conducts asbestos abatement projects in accordance with OSHA requirements (29 CFR Part 1926), applicable requirements of the <i>Clean Air Act</i> and the California Solid Waste Management Regulations.</p>
EO 13148, "Greening the Government through Leadership in Environmental Management"	This EO directs all Federal agencies to develop and implement environmental management systems to support environmental compliance; right-to-know and pollution prevention; reducing toxic chemical releases; reducing use of toxic chemicals, hazardous substances, and other pollutants; reducing ozone-depleting substances; and promoting environmentally and economically beneficial landscaping.
<i>Atomic Energy Act</i>	The AEA of 1954 makes the Federal government responsible for regulatory control of the production, possession, and use of three types of radioactive material: source, special nuclear, and byproduct (includes waste). Regulations promulgated by the U.S. Nuclear Regulatory Commission (NRC) under the AEA establish standards for the management of these radioactive materials (including waste).
<i>Hazardous Waste Control Act</i> (California Health and Safety Code § 25100 et seq.)	This act is the state authorization to implement the state hazardous waste programs pursuant to RCRA.
<i>Hazardous Waste Reduction Act</i> (California Health and Safety Code § 25244.12-24)	This act expands the State of California's hazardous waste source reduction activities to accelerate reduction in hazardous waste generation.

TABLE 4.15.2.1–3.—Summary of Major Laws, Regulations, and Orders Relevant to Waste Management (continued)

Laws, Regulations, and Orders	Description
<i>Medical Waste Management Act</i> (California Health and Safety Code § 117600-11860)	The <i>Medical Waste Management Act</i> establishes a comprehensive program for regulating the management, transport, and treatment of medical wastes that contain substances that may potentially infect humans.
40 CFR Part 260 Series	The implementing regulations established by EPA governing hazardous waste.
California Code of Regulations, Title 22	The implementing regulations established by Cal-EPA for management of hazardous waste.
DOE O 435.1, “Radioactive Waste Management”	DOE O 435.1 establishes the policies, guidelines, and minimum requirements by which DOE and its contractors manage radioactive waste, mixed waste, and contaminated facilities. This order establishes DOE policy that radioactive and mixed wastes be managed in a manner that ensures protection of the health and safety of the public, DOE, contractor employees, and the environment. In addition, the generation, treatment, storage, transportation, and disposal of radioactive wastes, and the other pollutants or hazardous substances they contain, must be accomplished in a manner that minimizes the generation of such wastes across program office functions and complies with all applicable Federal, state, and local environmental, safety, and health laws and regulations and DOE requirements.
DOE O 450.1, “Environmental Protection Program”	This order directs facilities to implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources impacted by DOE operations and by which DOE cost-effectively meets or exceeds compliance with applicable environmental, public health, and resource protection laws, regulations, and DOE requirements.

Source: LLNL 2002cc.

4.15.2.2 *Radioactive Waste*

Radioactive waste generated at LLNL includes LLW, MLLW, TRU waste, and mixed TRU waste. LLNL does not manage or generate high-level waste (a highly radioactive material that results from the reprocessing of spent nuclear fuel). LLW, MLLW, and TRU waste are produced primarily in laboratory experiments and component tests. Mixed wastes are discussed in Section 4.15.2.4. See Appendix B for a detailed description of radioactive waste, storage quantities, and treatment quantities.

DOE O 435.1 permits onsite storage of LLW and TRU wastes until appropriate disposal becomes available. Currently, there are no regulatory restrictions on the length of time this waste may be stored onsite, provided that disposal or offsite storage options are being pursued and the waste is stored in accordance with all applicable regulations. LLNL maintains the capability to treat solid radioactive wastes onsite. LLNL has treated liquid radioactive wastes at the Area 514 Tank Farm. The DWTF is replacing Area 514 (LLNL 2002ca). LLNL disposes of solid LLW offsite at the Nevada Test Site. Available storage space for LLW and TRU waste is limited by exposure considerations (i.e., radiation exposure to personnel) at a given storage location. However, radioactive wastes, unlike RCRA-regulated wastes, can be stored at various locations onsite provided that the wastes are properly packaged, labeled, and monitored. Radioactive waste management facilities are listed in Table 4.15.2–1.

As part of the effort to minimize the total quantity of radioactive waste that is generated at LLNL, facilities that generate this type of waste are designated as a Radioactive Materials